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Confirmation No.: 4740

Filed: 28 September 2001

For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS, AND METHODS

### Remarks

The Final Office Action mailed 20 November 2002 has been received and reviewed. Claims 1, 28-29, 32, 36-38, 40-42, and 48-52 having been amended, the pending claims are claims 1-61 and 66-75. Reconsideration and withdrawal of the rejections are respectfully requested. Support for the amendment to the specification can be found at page 7, lines 20-21. Support for the amendments to the claims can be found in the specification at page 7, lines 15-22, and in the claims as originally filed.

### Telephone Interview

Applicants' Representative, Ann M. Mueeting, thanks the Examiner for the courtesy extended during the telephone interview of March 7, 2003, during which the amendments and arguments presented herein were discussed. Also present was Matthew T. Scholz.

### Allowed Subject Matter

Applicants thank the Examiner for Notification to the effect that claims 66-70 have been allowed.

### Information Disclosure Statement

Applicants stipulated in the Response filed 7 August 2002 that the ICI Companies Datasheet entitled "Arlacel P135 Polymeric Emulsifier" listed on PTO-1449 form and submitted with the Information Disclosure Statement filed 27 February 2002 was dated prior to the filing date of the present application, 28 September 2001. Applicants, therefore, respectfully request that the Examiner acknowledge the ICI Companies Datasheet and initial and return copies of the 1449 forms that were submitted under cover of an Information Disclosure Statement filed with the U.S. Patent and Trademark Office on 27 February 2002.

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### **Restriction Requirement**

The restricted Group II claims (e.g., claims 53-61) have been withdrawn from consideration by the Examiner. Upon a finding of allowable subject matter in the Group I claims, Applicants respectfully request that the Restriction Requirement be modified and/or the claims withdrawn from consideration be rejoined and examined with the Group I claims.

The M.P.E.P. provides that "if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined."

M.P.E.P. §821.04 (see also, 1184 O.G. 84, citing In re Ochiai, 37 USPQ2d 1127 (Fed. Cir. 1995) and In re Brouwer, 37 USPQ2d 1663 (Fed. Cir. 1996)).

Applicants elected the Group I product claims, which include moisturizing compositions (e.g., claims 32-37), tissue antiseptic compositions (e.g., claims 38-41), personal care compositions (e.g., claims 42-49), and transdermal drug delivery compositions (e.g., claims 50-52). The Group II claims, which have been withdrawn from consideration, are directed to methods of using the moisturizing compositions of claims 32, 36, and 37 (e.g., claims 53-55), methods of using the tissue antiseptic compositions of claims 38, 40, and 41 (e.g., claims 56-58), and methods of using the transdermal drug delivery compositions of claims 50-52 (e.g., claims 59-61). Thus, all the non-elected Group II method claims depend from and/or include all the limitations of the indicated product claims.

Applicants respectfully request that all the Group II claims be rejoined and examined. Applicants respectfully submit that the Group II claims are patentable over the art of record for reasons similar to those presented herein for the Group I claims. Applicants respectfully request that the pending Group II claims (e.g., claims 53-61) be passed on to allowance.

Furthermore, pursuant to the Examiner's request regarding the selection of species, Applicants elected, with traverse to the extent that it was understood that the requirement would be withdrawn upon the finding of an allowable genus, vinyl polymers derived from

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isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate, which are all encompassed by the claims of Group I (Response to Restriction Requirement, filed February 27, 2002). Applicants submit that present claims 71-75 recite vinyl polymers comprising isooctyl acrylate, 2-ethylhexyl acrylate, and polyethylene oxide methacrylate, which are encompassed by the genus of Group I and must be rejoined. Applicants, therefore, respectfully request that the Examiner rejoin claims 71-75.

#### **The 35 U.S.C. §112, Second Paragraph, Rejection**

The Examiner rejected claims 1-28, 32-36, 38-40, and 42-48 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner alleged that the claims are vague and indefinite because it is unclear what Applicant intends by an alkyl-Y containing side chain having at least 4 carbon atoms on average. Specifically, the Examiner alleged that it is unclear how a chemical compound can contain an average number of atoms.

Applicants respectfully submit that the language, "wherein the alkyl group of the alkyl-Y-containing side chain has a least 4 carbon atoms on average" (e.g., claim 1) is clear to one of skill in the art. One skilled in the art understands that a polymer is made from monomers. The claims recite "a vinyl polymer comprising ... alkyl-Y-containing side chains" (claim 1). That is, a vinyl polymer is derived from monomers wherein the monomers include alkyl-Y-containing side chains. Each monomer including an alkyl-Y-containing side chain includes an alkyl group on the side chain. The alkyl groups of the side chains of each individual monomer in the polymer may be of varying length, but the average number of carbon atoms on the side chain of the monomers that form the polymer is at least 4. Additionally, it is known in the art that many such monomers including side chains of varying lengths are available commercially as mixtures of compounds that would provide an "average number of carbons" or average chain

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length in the mixture. Applicants submit that language is clear to one of skill in the art that a number average is intended.

Furthermore, the claim language reciting a number of "carbon atoms on average" has been used in issued U.S. patents. See, for example, U.S. Pat. No. 6,346,259, issued February 12, 2002, to Terasaki et al. Therein, claim 1 includes the language, "wherein R is a linear or branched alkyl group or alkenyl group having 8-40 carbon atoms on average." Additionally, the term "average chain length" has been recited in issued U.S. patents. See, for example, U.S. Patent Nos. 6,210,695 (issued April 3, 2001, to Beerse et al.), 6,207,012, (issued March 27, 2001, to Oriaran et al.), and 5,362,413 (issued November 8, 1994, to Kaufmann et al.).

Based on the above remarks, Applicants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. §112, second paragraph.

### The 35 U.S.C. §103 Rejection

The Examiner maintained the rejection of claims 1-52 under 35 U.S.C. §103(a) over EP 0 661 964 B1 (Schwartzmiller et al.) in view of EP 0 011 806 (Sonnabend).

Applicants respectfully submit that the present claims are distinguished over the cited documents in that the present invention includes vinyl polymers including ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH<sub>3</sub>, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration (e.g., claim 1) and also includes vinyl polymers including ethylene-oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration (e.g., claim 28).

Schwartzmiller et al. disclose acrylate polymers (Schwartzmiller et al., page 2, line 34); however, they do not include ethylene oxide-containing side chains and alkyl-Y-containing or alkoxy-containing side chains. While Sonnabend discloses polymers including ethylene oxide side chains, the Sonnabend polymers are water soluble (Sonnabend, page 6, line

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15); that is Sonnabend does not include vinyl polymers that are insoluble or sparingly soluble in the water phase.

Applicants further submit that the Examiner has failed to present a *prima facie* case of obviousness with respect to the present claims, as amended, over Schwartzmiller et al. in view of Sonnabend for the following reasons.

As indicated by the Examiner at page 5, paragraph 2 of the present Office Action, "obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art." Applicants submit that there is no teaching, suggestion, or motivation to combine these documents, and furthermore, that the documents fail to teach Applicants' claims, as amended.

The disclosure of Schwartzmiller et al. relates to "a use of a composition which enhances the ability of pressure sensitive adhesives to adhere to treated mammalian skin" (page 2, lines 3-4). Although Schwartzmiller et al. disclose water-in-oil emulsions that include oil soluble acrylate polymers (e.g., page 2, lines 24-30), they do not disclose or suggest the polymers recited in the pending claims.

Sonnabend discloses "a polymer useful as a pH responsive thickener for aqueous systems . . . comprising an aqueous emulsion copolymer" (e.g., page 2, lines 33-34). The polymers of Sonnabend "are useful as watersoluble thickeners" (page 6, line 15). That is, the vinyl polymers of Sonnabend are water soluble. The present claims, as amended, recite that the vinyl polymer is insoluble or sparingly soluble in the water phase. Therefore, Schwartzmiller et al. in combination with Sonnabend fail to disclose Applicants' claims as amended.

The Examiner stated at page 5, paragraph 2 of the present Office Action that it would have been obvious to add the vinyl polymer of EP '806 (Sonnabend) to the water-in-oil emulsion of EP '964 (Schwartzmiller et al.) expecting to thicken the emulsion. Applicants respectfully submit that thickening of an emulsion is not indicated as an objective of

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Schwartzmiller et al. Therefore, there is no motivation to combine the teachings of Schwartzmiller et al. with those of Sonnabend.

Additionally, there is no reasonable expectation that the water-in-oil emulsions of Schwartzmiller et al. would be successfully thickened using the vinyl polymers of Sonnabend. The polymers of Sonnabend thicken aqueous compositions (Sonnabend, page 7, line 1). However, water-in-oil emulsions, such as disclosed in Schwartzmiller et al., contrary to the Examiner's assertion, are very specific compositions and very different from typical aqueous compositions as explained at page 5, lines 4-10 (listed below).

"water-in-oil emulsion" refers to a water-in-oil mixture in which the oil forms a continuous phase and the water is in discontinuous droplets. A water-in-oil emulsion can be distinguished from an oil-in-water emulsion by using an electrical emulsion tester according to the method described in the Examples Section. An oil-in-water emulsion will conduct electricity with relatively low resistance since water forms its external or continuous phase, whereas a water-in-oil emulsion will not conduct, or very poorly conduct, electricity.

Furthermore, "[i]f the resulting emulsion remained as 2 phases, it was concluded that the continuous phase of the emulsion must be oil since it repels and does not dissolve or disperse into the water, and that thereby the original sample was a water-in-oil emulsion. Conversely, if the emulsion sample easily dissolves or disperses into the water, the original sample was an oil-in-water emulsion." (specification, page 29, lines 11-15). Clearly, therefore, the water-in-oil emulsions of the present invention are not typical aqueous compositions.

For the reasons recited herein, Applicants submit that the cited art fails to provide a teaching or suggestion to make the combinations and/or modifications discussed herein with a

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reasonable expectation of success. Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness.

In response to the Examiner's statement that Applicants have not provided any evidence of record to support the statement that, in certain claimed embodiments (e.g., claims 4 and 30), carboxylic functional polymers typically are not capable of stabilizing water-in-oil emulsions at low pH, Applicant points out that in the present specification at page 2, lines 24-27, it is disclosed that "it has been found that the carboxylic acid functional polymers are typically not capable of stabilizing water-in-oil emulsions at low pH, e.g., pH of less than about 5 and especially less than about 4.5."

Whether or not a showing of facts is preferred, the Examiner is required, absent an explanation otherwise, to accept as true a disclosure made in the specification. "In any event, it is incumbent upon the Patent Office, whenever a rejection [based on a doubt of the objective truth of the statements] to explain *why* it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement." In re Marzocchi and Horton, 169 U.S.P.Q.367 (C.C.P.A. 1971). As the Examiner has not provided any such reasoning or evidence inconsistent with the disclosure of the specification, the Examiner must accept the disclosure as true.

Nonetheless, Applicants draw the Examiner's attention to pages 34-36, of Comparative Example C of Applicants' Assignees' copending application Serial No. 09/967,578. As indicated in Table 3c and the statement following, higher pH formulations yield more stable emulsions.

Applicants request that the Examiner reconsider and withdraw the rejections under 35 U.S.C. §103.



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It is respectfully submitted that the pending claims 1-61 and 66-75 are in condition for allowance and notification to that effect is respectfully requested.

The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for  
Deral T. MOSBEY et al.

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March 20, 2003  
Date

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CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that this paper is being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Assistant Commissioner for Patents, Washington, D.C. 20231, on this 20 day of March, 2003, at 9:30 pm (Central Time).

By: Name: Ann M. Mueeting

**APPENDIX A - SPECIFICATION/CLAIM AMENDMENTS  
INCLUDING NOTATIONS TO INDICATE CHANGES MADE**

**Serial No.: 09/966,511**

**Docket No.: 55837US002**

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Amendments to the following are indicated by underlining what has been added and bracketing what has been deleted.

**In the Specification**

The paragraph beginning at page 7, line 15, has been amended as follows:

-- The vinyl polymers of the present invention include, for example, polymers derived from vinyl monomers such as (meth)acrylates, (meth)acrylamides, vinyl ethers, vinyl acetates and their hydrolyzed derivatives, styrenic compounds (i.e., derivatives of styrene), and N-vinyl lactams (including, for example, N-vinyl pyrrolidone, N-vinyl caprolactam, and their derivatives). Suitable vinyl polymers are soluble (i.e., form transparent homogenous solutions) or dispersible in the oil phase and tend to be insoluble or sparingly soluble in the water phase. Preferred vinyl polymers are soluble in the oil phase. Certain vinyl polymers are terpolymers. --

**In the Claims**

For convenience, all pending claims are shown below.

1. (AMENDED) A water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH<sub>3</sub>, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
2. The water-in-oil emulsion of claim 1 wherein the vinyl polymer is soluble in the oil phase.

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3. The water-in-oil emulsion of claim 1 wherein the ethylene oxide groups and alkyl-Y groups are in different side chains.
4. The water-in-oil emulsion of claim 1 which is stable.
5. The water-in-oil emulsion of claim 1 which is substantive.
6. The water-in-oil emulsion of claim 5 which provides a reduction in skin capacitance of greater than about 15%.
7. The water-in-oil emulsion of claim 1 wherein the ethylene oxide-containing side chains further include isopropylene oxide groups.
8. The water-in-oil emulsion of claim 1 wherein the ethylene oxide-containing side chains include at least four ethylene oxide groups.
9. The water-in-oil emulsion of claim 1 wherein the oil phase comprises one or more oils present in a total amount of at least about 20 wt-%, based on the total weight of the emulsion.
10. The water-in-oil emulsion of claim 1 wherein the ethylene oxide-containing side chains are derived from one or more monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomers.

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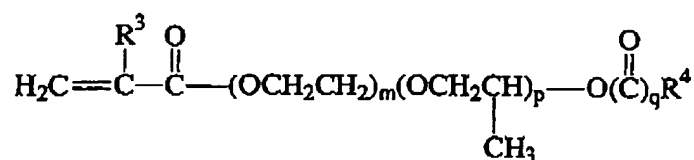
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11. The water-in-oil emulsion of claim 10 wherein the monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomers have the formula:



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R<sup>3</sup> is H or CH<sub>3</sub>; and

R<sup>4</sup> is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

12. The water-in-oil emulsion of claim 1 wherein the alkyl-Y-containing side chains are derived from one or more monoethylenically unsaturated alkyl (meth)acrylic monomers.
13. The water-in-oil emulsion of claim 12 wherein the monoethylenically unsaturated alkyl (meth)acrylic monomers are selected from the group consisting of (meth)acrylate monomers, (meth)acrylamide monomers, and combinations thereof.

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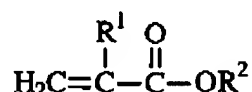
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14. The water-in-oil emulsion of claim 12 wherein the monoethylenically unsaturated alkyl (meth)acrylic monomers are alkyl (meth)acrylate monomers having the formula:



wherein:

R<sup>1</sup> is H or CH<sub>3</sub>; and

R<sup>2</sup> is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms.

15. The water-in-oil emulsion of claim 1 further comprising a stabilizer.
16. The water-in-oil emulsion of claim 1 wherein the vinyl polymer is the reaction product of:
- about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylic monomer; and
- about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer.
17. The water-in-oil emulsion of claim 1 which has compatibility with at least one bioactive agent.
18. The water-in-oil emulsion of claim 17 wherein the bioactive agent is an antimicrobial.

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19. The water-in-oil emulsion of claim 18 wherein the antimicrobial is chlorhexidine gluconate.
20. The water-in-oil emulsion of claim 18 wherein the antimicrobial is an iodophor.
21. The water-in-oil emulsion of claim 20 wherein the iodophor is povidone-iodine.
22. The water-in-oil emulsion of claim 1 wherein a pressure sensitive adhesive tape applied over the emulsion on skin adheres at a level of at least about 50% of the level of adhesion of the pressure sensitive adhesive tape applied directly to the skin.
23. The water-in-oil emulsion of claim 1 wherein the vinyl polymer has a calculated HLB of more than about 1 and less than about 10.
24. The water-in-oil emulsion of claim 1 comprising at least about 0.25 wt-% of the vinyl polymer, based on the total weight of the emulsion.
25. The water-in-oil emulsion of claim 1 comprising no more than about 10 wt-% of the vinyl polymer, based on the total weight of the emulsion.
26. The water-in-oil emulsion of claim 1 further comprising a humectant.
27. The water-in-oil emulsion of claim 1 further comprising one or more additives selected from the group consisting of humectants, surfactants, conditioners, sunscreen agents, insect repellents, vitamins, herbal extracts, antiperspirant agents, deodorant agents, skin bleaching agents, skin coloring agents, hair

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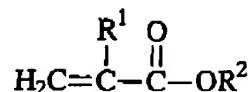
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bleaching agents, hair coloring agents, depilating agents, antidandruff agents, antiacne agents, astringents, tensors, skin toning agents, glitter, pigments, dyes, bleaches, perfumes, fragrances, preservatives, antioxidants, waxes, film-forming polymers, propellants, buffers, organic suspending agents, inorganic suspending agents, organic thickening agents, inorganic thickening agents, plasticizers, herbal extracts, flavoring agents, corn removers, callus removers, wart removers, and combinations thereof.

28. (AMENDED) A water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
29. (AMENDED) A water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer [comprising] that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:



wherein:

R<sup>1</sup> is H or CH<sub>3</sub>; and

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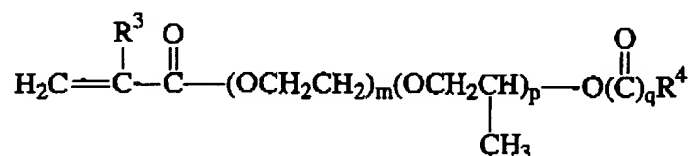
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$R^2$  is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and  
 about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

$m$  is at least 2;

$p$  is 0 to 50;

$q$  is 0 or 1;

$R^3$  is H or  $\text{CH}_3$ ; and

$R^4$  is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the “ $p$ ” groups) and the ethylene oxide groups (the “ $m$ ” groups) are arranged in a reversed, alternating, random, or block configuration;

with the proviso that the vinyl polymer includes no more than about 0.1 wt-% copolymerized acidic monomers.

30. The water-in-oil emulsion of claim 29 which is stable.

31. The water-in-oil emulsion of claim 29 which is substantive.



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32. (AMENDED) A moisturizing composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH<sub>3</sub>, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
33. The moisturizing composition of claim 32 which is stable.
34. The moisturizing composition of claim 32 which is substantive.
35. The moisturizing composition of claim 32 wherein a pressure sensitive adhesive tape applied over the emulsion on skin adheres at a level of at least about 50% of the level of adhesion of the pressure sensitive adhesive tape applied directly to the skin.
36. (AMENDED) A moisturizing composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
37. (AMENDED) A moisturizing composition comprising a water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer [comprising] that is

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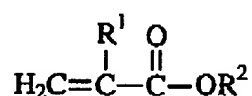
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insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

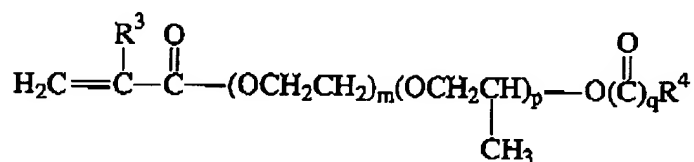


wherein:

$\text{R}^1$  is H or  $\text{CH}_3$ ; and

$\text{R}^2$  is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

$m$  is at least 2;

$p$  is 0 to 50;

$q$  is 0 or 1;

$\text{R}^3$  is H or  $\text{CH}_3$ ; and

$\text{R}^4$  is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and

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the ethylene oxide groups (the “m” groups) are arranged in a reversed, alternating, random, or block configuration.

38. (AMENDED) A tissue antiseptic composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH<sub>3</sub>, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and an antimicrobial; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
39. The tissue antiseptic composition of claim 38 which is stable.
40. (AMENDED) A tissue antiseptic composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and an antimicrobial; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
41. (AMENDED) A tissue antiseptic composition comprising: an oil phase; a water phase; an antimicrobial; and a vinyl polymer [comprising] that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

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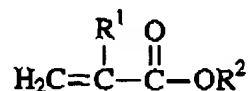
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about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

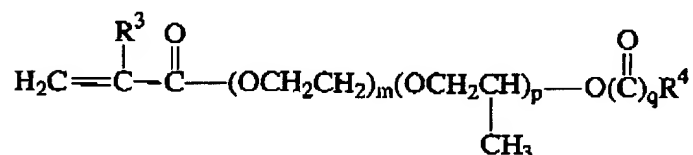


wherein:

$\text{R}^1$  is H or  $\text{CH}_3$ ; and

$\text{R}^2$  is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

$m$  is at least 2;

$p$  is 0 to 50;

$q$  is 0 or 1;

$\text{R}^3$  is H or  $\text{CH}_3$ ; and

$\text{R}^4$  is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the “p” groups) and the ethylene oxide groups (the “m” groups) are arranged in a reversed, alternating, random, or block configuration.

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42. (AMENDED) A personal care composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH<sub>3</sub>, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
43. The personal care composition of claim 42 which is a hair care composition.
44. The personal care composition of claim 43 wherein the hair care composition is a styling agent, shampoo, dye, conditioner, rinse, antidandruff preparation, or mask for the hair.
45. The personal care composition of claim 42 which is in the form of an insect repellant, shaving product, hand lotion, body lotion, gel, cream, sunless tanning composition, sunscreen, cleanser, toner, astringent, freshener, mask for skin, nail polish, nail strengthener, underarm deodorant, antiperspirant, bath powder, talc, bath oil, bubble bath, makeup, cologne, perfume, composition for cushioning sores, or hair removal composition.
46. The personal care composition of claim 42 which is a makeup.
47. The personal care composition of claim 46 wherein the makeup is a lipstick, eye shadow, eye liner, mascara, rouge, face powder, or foundation.

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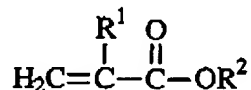
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48. (AMENDED) A personal care composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
49. (AMENDED) A personal care composition comprising a water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer [comprising] that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:
- about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:



wherein:

R<sup>1</sup> is H or CH<sub>3</sub>; andR<sup>2</sup> is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:

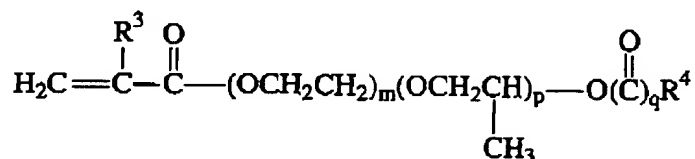
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wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R<sup>3</sup> is H or CH<sub>3</sub>; andR<sup>4</sup> is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

50. (AMENDED) A transdermal drug delivery composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH<sub>3</sub>, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and a pharmaceutical agent; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.
51. (AMENDED) A transdermal drug delivery composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-

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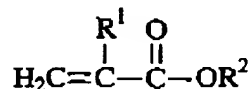
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containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; a water phase; and a pharmaceutical agent; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

52. (AMENDED) A transdermal drug delivery composition comprising a water-in-oil emulsion comprising: an oil phase; a water phase; a pharmaceutical agent; and a vinyl polymer [comprising] that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

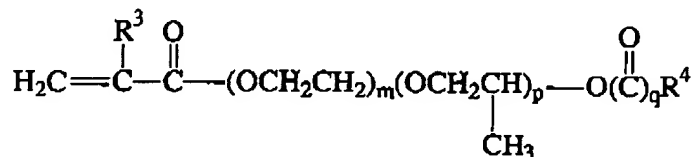


wherein:

$\text{R}^1$  is H or  $\text{CH}_3$ ; and

$\text{R}^2$  is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:



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m is at least 2;

p is 0 to 50;

q is 0 or 1;

R<sup>3</sup> is H or CH<sub>3</sub>; and

R<sup>4</sup> is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the “p” groups) and the ethylene oxide groups (the “m” groups) are arranged in a reversed, alternating, random, or block configuration.

53. A method of moisturizing mammalian skin comprising applying a moisturizing composition of claim 32 to mammalian skin.
54. A method of moisturizing mammalian skin comprising applying a moisturizing composition of claim 36 to mammalian skin.
55. A method of moisturizing mammalian skin comprising applying a moisturizing composition of claim 37 to mammalian skin.
56. A method of disinfecting mammalian tissue comprising applying a tissue antiseptic composition of claim 38 to mammalian tissue.
57. A method of disinfecting mammalian tissue comprising applying a tissue antiseptic composition of claim 40 to mammalian tissue.
58. A method of disinfecting mammalian tissue comprising applying a tissue antiseptic composition of claim 41 to mammalian tissue.

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59. A method of delivering a pharmaceutical agent to a mammal comprising applying a transdermal drug delivery composition of claim 50 to mammalian skin.
60. A method of delivering a pharmaceutical agent to a mammal comprising applying a transdermal drug delivery composition of claim 51 to mammalian skin.
61. A method of delivering a pharmaceutical agent to a mammal comprising applying a transdermal drug delivery composition of claim 52 to mammalian skin.
66. (ALLOWED) A water-in-oil emulsion comprising:  
a vinyl polymer comprising the reaction product of monomers comprising:  
isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;  
an oil phase; and  
a water phase.
67. (ALLOWED) A moisturizing composition comprising a water-in-oil emulsion comprising:  
a vinyl polymer comprising the reaction product of monomers comprising:  
isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;  
an oil phase; and  
a water phase.
68. (ALLOWED) A tissue antiseptic composition comprising a water-in-oil emulsion comprising:  
a vinyl polymer comprising the reaction product of monomers comprising:  
isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;  
an oil phase;

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a water phase; and  
an antimicrobial.

69. (ALLOWED) A personal care composition comprising a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising:  
isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;  
an oil phase; and  
a water phase.

70. (ALLOWED) A transdermal drug delivery composition comprising a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising:  
isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;  
an oil phase;  
a water phase; and  
a pharmaceutical agent.

71. A water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising:  
(i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl  
acrylate, or both;  
an oil phase; and  
a water phase.

72. A moisturizing composition comprising a water-in-oil emulsion comprising:

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- a vinyl polymer comprising the reaction product of monomers comprising:
- (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;
- an oil phase; and
- a water phase.
73. A tissue antiseptic composition comprising a water-in-oil emulsion comprising:
- a vinyl polymer comprising the reaction product of monomers comprising:
- (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;
- an oil phase;
- a water phase; and
- an antimicrobial.
74. A personal care composition comprising a water-in-oil emulsion comprising:
- a vinyl polymer comprising the reaction product of monomers comprising:
- (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;
- an oil phase; and
- a water phase.
75. A transdermal drug delivery composition comprising a water-in-oil emulsion comprising:
- a vinyl polymer comprising the reaction product of monomers comprising:
- (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;
- an oil phase;

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a water phase; and

a pharmaceutical agent.